**THE FIGHTER PILOT CHALLENGE: IN THE BLINK OF AN EYE**

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To be a fighter pilot you must have very fast reactions – travelling at speeds of over 2500 km per hour (twice the speed of sound) means about 700m every second! So splits of a second can make all the difference, you blink your eyes and you’ve moved an incredible 140m! Could you respond to outside events with minimal delay and take appropriate action… let’s test your reaction time?

The simple experiment described on this page is dead simple, you tests the time it takes to react to catch a falling ruler.

The test requires two people…

**INSTRUCTIONS**

i) Get a 30cm ruler…

ii) One person holds the ruler near the 30cm mark and lets it hang vertically…

iii) The other person places their thumb and index finger either side of the 0cm mark ready to catch it when it falls - their fingers shouldn’t touch the ruler.

iv) Without warning the person holding the ruler lets go and the subject tries to catch the ruler as soon as possible.

*[Hint: To prevent guessing, vary the time before letting go of the ruler].*

v) The level (in cm) just above the subject’s first finger where the ruler was caught is recorded.

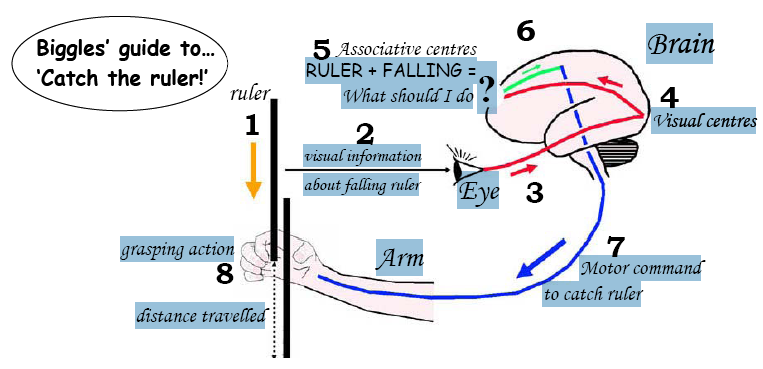
vi) The same person is tested 5 times and then calculate the mean average of their results (add all five numbers together and then divide by five).

viii) Now swap over and test your partner.

We’ll work out your results in a minute, but first – here comes the science!

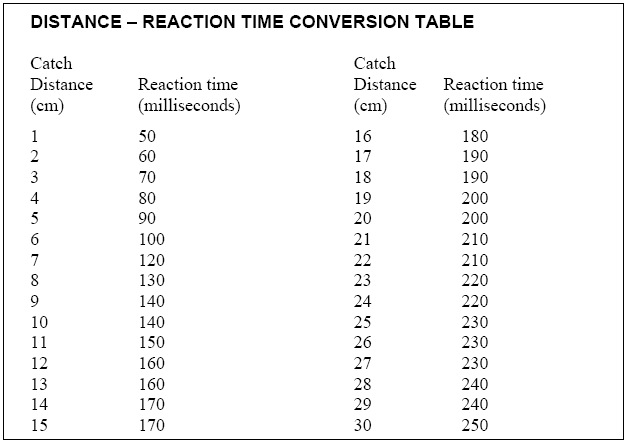
**The Science Of Catching The Ruler**

The experiment tests how long it takes the brain to translate visual information (falling ruler) into your voluntary (or conscious) motor commands and actions (grasping finger movements) that lead to the ruler being caught. The shorter the time, the faster your reactions.….that’s if you were paying attention in the first place! Indeed practice specifically affects the ‘associative centres’ in the brain, so that you can respond faster to what’s happening in your visual world. The flow of information along the ‘visual’ and ‘motor’ nerve pathways is relatively constant even with lots of practice. It all comes down to ‘attention’ or ‘…being on the ball!’

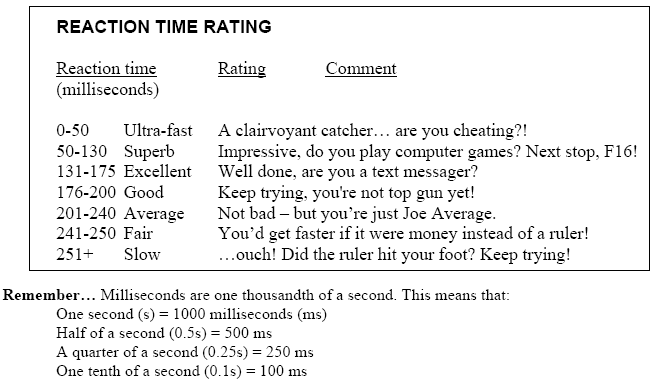


**How Did You Do?**

From the table below, the ‘mean catch distance’ on the ruler can be converted into a ‘mean reaction time’ in milliseconds (Remember: 1 millisecond is one thousandth of asecond).



So what does your reaction time mean – are you fast enough for an F-16?



A final thought:

Can you imagine doing several tasks together, each requiring fast reaction times with high precision, whilst at the same time concentrating on steering a jet plane – for example as part of an aerobatic team at the Paris air show?